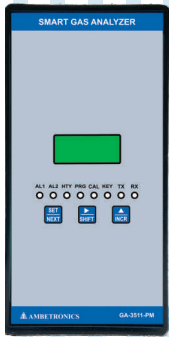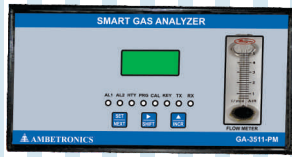# GA-3511-(LCD)

AMBETRONICS

SMART GAS ANALYZER
FOR OXYGEN / TOXIC / COMBUSTIBLE GASES

MODEL NO.: GA-3511 (LCD DISPLAY)

| PANEL MOUNT-V | PANEL MOUNT-H | WEATHERPROOF | FLAMEPROOF |

Features

- Provides a fast and reliable output by using Electro Chemical / Pellister Sensor Technology.
- Optimized for detection of smallest leak of Oxygen, Toxic and Combustible Gases.
- Highly resistant to poisoning and etching.
- Capable of detecting down to PPM, %LEL & %V/V.
- Digital display of Gas Concentration on LCD Display for GA-3511
- Standard 4-20mA signal output with configurable range.
- Easy handling and programming with 3 keys for Weatherproof Models.
- Can be programmed using Remote Control from 10 meters in line of site distance.
- Non - Intrusive programming for Flameproof model using Magnetic pen.
- Password protected programming with password changing facility.
- One man Auto Software Gas Calibration.
- Optional Alarm relay contacts with two configurable Alarm levels & one Relay for fail safe relay.
- Optional STEL and TWA set points can be configured for Toxic Gases.
- Optional RS-485 communication port with MODBUS RTU Protocol.

Applications

- Refineries
- Cold Storage
- Sewage Plants
- Fertilizers Plants
- Stack Monitoring
- Chlorination Plant
- Gas Metering skid
- Gas Cylinder Bank
- Ambient Monitoring
- Pulp & Paper Plants
- Oil & Gas Industries
- Gas Pipeline Project

- Gas Metering Station
- Heat Treatment Plants
- Chemical Storage Area
- Control Atmosphere
- Burner / Furnace Areas
- Power & Industrial Plants
- Bullet Yard / Storage Yard
- Chemical Processing Plant
- Coal Mine and Confined Area
- Chemical & Petrochemical Plants
- Acid Alkalizes & Dyes Mfg. Plants
- Automotive Industries / Paint Shops
- Offshore Drilling & Processing Platforms

MUST FOR HUMAN AND INDUSTRIAL SAFETY

TECHNICAL SPECIFICATIONS

General :

Detection Method	:	Electrochemical
Gases Detected	:	Oxygen / Toxic Gases, Infraread/ Solidstate/Combustible
Display	:	8x2 Alphanumeric LCD Display with Backlit 8 LEDs to indicate status of instrument
Control Action	:	I) Two independent alarm set points with Latch & Non-Latch Facility. ii) User selectable Hysteresis and Logic option. iii) Configurable STEL and TWA set points for Toxic Gases (Optional)
Setting	:	By 3 Keys on front panel for WP Model.

Performance :

Accuracy	:	±2% of Full Scale.
Response Time	:	T20 < 18 Seconds T50 < 22 Seconds T90 < 40 Seconds
Start-up Time	:	Less than 30 Seconds.

Electrical :

Supply Voltage	:	18 to 36 VDC, Typically 24 VDC, 230VAC ± 10%
Power Consumption	:	Less than 3.6 Watts.
Cable	:	1) For Weatherproof Model : 3 Wire (1.5 mm^2) Flexible Cable. 2) For Flameproof Model : 3 Core copper wire, Shielded Armored Cable. R-12 ohm / km per core & C - 0.15mFd per Km &Reactance 0.107 hms / km

Pannel Mount Housing :

Dimension	:	Vertical - 96 mm (W) x 194 mm (H) x 213mm (D)
	:	Horizontal - 183 mm (W) x 90 mm (H) x 213 mm (D)
Enclosure	:	ABS Plastic
Mounting	:	Panel Mounting
Weight	:	Approx 1.2 Kg

Weatherproof Housing :

Protection Class	:	IP-65
Cabinet Material	:	Polycarbonate, Grey Colour
Cable Entry	:	Thermoplastic Cable Gland (IP 68)
Dimension	:	183mm (H) x 222 mm (W) x 110 mm (D)
Mounting	:	Wall Mounting / Stand Mounting / Pipe Mounting
Weight	:	Approx 1.2 kg

Output Signal :

Standard	:	4-20mA Current Output with configurable range selection with 470 ohm load driving capacity.
Optional	:	a) Three SPDT Relay (one for FailSafe and Two for Alarm indication) of rating. b) 0 to 10 VDC
Optional	:	RS-485 isolated Port with MODBUS RTU protocol.

Error Monitoring :

i) During Sensor Break / Open, the Display shows 'SENSOR OPEN' & 4-20mA output goes down to 3.7mA. for Combustible gases only.

ii) During Over Range, the Display shows 'OVER RANGE' & 4-20mA output goes up to 21mA.

Environmental :

Operating Temperature	:	-15 to +55^{0}C
Humidity	:	Less than 95% Non-Condensing.

Accessories (Optional) :

- certified 24 VDC Power Supply.
- Canopy & Stand Mounting.
- Gas Calibration Kit (0.5,1,3,10) Litre.
- Hooter Cum Flasher.
- Gas Sampling & Conditioning System.
- RS-485 to USB OR RS-232 Converter.
- PC Based SCADA Software, Modem.

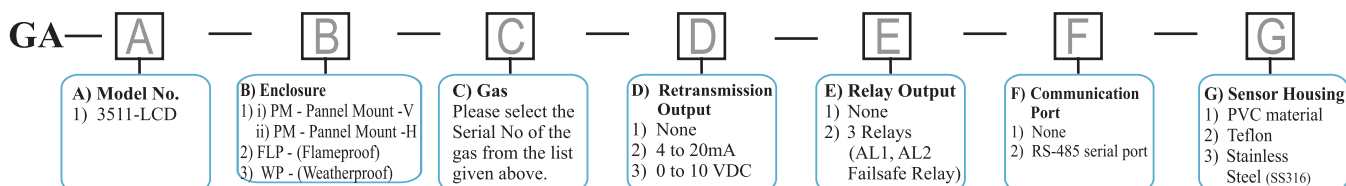## Flameproof Housing :

Protection Class	:	IP-66 for Gas Gr. IIA, IIB & IIC, CMRI Approved Enclosure, CCOE (Optional
Cabinet Material	:	Cast Aliminium alloy, LM-6
Cable Entry	:	Double compression cable gland (Ex-Proof), ¾" ET-type
Dimension	:	350 mm (H) x 290 mm (W) x 170 mm (D) (With Gland)
Mounting	:	Wall Mounting / Stand Mounting / Pipe Mounting
Weight	:	Approx 5.8 kg

LIST OF GAS TRANSMITTERS WITH RANGES & RESOLUTION

Dimension

S.N.	GASES	ON DISPLAY	RANGE	RES.	S.N.	GASES	ON DISPLAY	RANGE	RES.
1.	Oxygen	O2	0-25% Vol.	0.1, 0.01, 1	11.	Ammonia	Nh_3	0-50 PPM	0.1, 1
2.	Oxygen	O2	0-100% Vol.	0.1, 1	12.	Ozone	O_3	0-2 PPM	0.1, 0.01
3.	Nitrogen Dioxide	NO_2	0-100 PPM	1.0, 1	13.	Ethylene Oxide	C_2H_4O	0-20 PPM	0.1, 0.01, 1
4.	Nitric Oxide	NO	0-200 PPM	0.1, 1	14.	Phosphine	Ph_3	0-5 PPM	0.1, 0.01, 1
5.	Sulphur Dioxide	SO_2	0-20 PPM	0.1, 1	15.	Hydrogen	H_2	0-1000 PPM	1
6	Chlorine	CL_2	0-10 PPM	0.1, 1	16.	Phosgene	$COCL_2$	0-1 PPM	0.1, 0.01
7	Carbon Monoxide	CO	0-2000 PPM	1	17.	Fluorine	F_2	0-100 PPM	0.1, 1
8	Hydrogen Sulphide	H_2S	0-200 PPM	0.1, 1	18.	Hydrogen Fluoride	HF	0-50 PPM	0.1, 1
9	Hydrogen Cynide	HCN	0-10 PPM	0.1, 0.01, 1	19.	Hydrogen Bromide	Hbr	0-10 PPM	0.1, 0.01
10	Hydrogen Chloride	HCL	0-50 PPM	0.1, 1	20.	Ethyline Oxide	ETO	0-100 PPM	0.1, 1

* Please specify if any other gases you require which is not in the list (Available on Request)

ORDERING INFORMATION

GA— A — B — C — D — E — F — G

A) Model No.
1) 3511-LCD

B) Enclosure
1) i) PM - Pannel Mount -V
   ii) PM - Pannel Mount -H
2) FLP - (Flameproof)
3) WP - (Weatherproof)

C) Gas
Please select the Serial No of the gas from the list given above.

D) Retransmission Output
1) None
2) 4 to 20mA
3) 0 to 10 VDC

E) Relay Output
1) None
2) 3 Relays (AL1, AL2 Failsafe Relay)

F) Communication Port
1) None
2) RS-485 serial port

G) Sensor Housing
1) PVC material
2) Teflon
3) Stainless Steel (SS316)

* Before placing order please Refer the above ordering information or Contact below address for assistance.